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10/612,226

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EXAMINER

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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* ALAN F. JANKOWSKI, JEFFREY D. MORSE,  
RAVINDRA S. UPADHYE, and MARK A. HAVSTAD

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Appeal 2010-002084  
Application 10/612,226  
Technology Center 1700

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Before BRADLEY R. GARRIS, TERRY J. OWENS, and  
LINDA M. GAUDETTE, *Administrative Patent Judges*.

GARRIS, *Administrative Patent Judge*.

DECISION ON APPEAL<sup>1</sup>

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<sup>1</sup> The two-month time period for filing an appeal or commencing a civil action, as recited in 37 C.F.R. § 1.304, or for filing a request for rehearing, as recited in 37 C.F.R. § 41.52, begins to run from the “MAIL DATE” (paper delivery mode) or the “NOTIFICATION DATE” (electronic delivery mode) shown on the PTOL-90A cover letter attached to this decision.

Appellants appeal under 35 U.S.C. § 134 from the Examiner's decision rejecting claims 1-13, 28, 29, 31-44, and 47. We have jurisdiction under 35 U.S.C. § 6.

We REVERSE.

Appellants claim an apparatus comprising a fuel cell stack 85 having a pair of electrodes 86, 88 including an anode and a cathode, and a thin film solid oxide electrolyte 87 disposed therebetween, and an electric heater 210 positioned in at least one location selected from: between the electrodes, and "along a fuel path at a point upstream from the fuel cell stack for heating the fuel prior to the fuel reaching the fuel cell stack" (claim 1; figs. 6, 11).

Further details regarding this claimed subject matter are set forth in representative claim 1 which reads as follows:

1. An apparatus comprising:
  - a fuel cell stack having a pair of electrodes including an anode and a cathode, and a thin film solid oxide electrolyte disposed therebetween;
  - a manifold coupled to the fuel cell stack for conveying a fuel to the fuel cell stack;
  - a fuel processor, coupled to the manifold and having:
    - a substrate support including at least one channel, and
    - a catalyst for reforming the fuel; and
  - an electric heater positioned in at least one location selected from: between the electrodes, and along a fuel path at a point upstream from the fuel cell stack for heating the fuel prior to the fuel reaching the fuel cell stack.

Under 35 U.S.C. § 103(a), the Examiner rejects all appealed claims as set forth below:

claims 1 and 33 over Holladay (US 7,077,643 B2, issued Jul. 18, 2006) in view of Ito (US 5,227,258, issued Jul. 13, 1993) and Keskula (US 2004/0151955 A1, published Aug. 5, 2004); and

claims 1-7, 9, 10, 12, 13, 28, 29, 31, 32, and 34-41 over Maru (US 4,365,007, issued Dec. 21, 1982) in view of Ito and Keskula as well as various dependent claims over these references and further in view of other applied prior art.

The Examiner acknowledges that the apparatus of either Maru or Holladay does not include an electric heater positioned "along a fuel path at a point upstream from the fuel cell stack for heating the fuel prior to the fuel reaching the fuel cell stack" as required by claim 1 (Ans. para. bridging 4-5, 9). Concerning this acknowledged difference, the Examiner finds that Keskula discloses an electric heater 52 positioned as recited in claim 1 and concludes that it would have been obvious to provide the apparatus of Maru or Holladay with an electric heater positioned along the fuel path at a point upstream from the fuel cell stack as claimed by Appellants in view of Keskula (*id.*).

Appellants argue that the Examiner's above finding and conclusion of obviousness is improper because Keskula's electric heater 52 is not positioned along a fuel path as claimed but instead is located outside of the fuel path as shown in Figure 1 of Keskula (App. Br. 15-17). We agree.

In response to this argument, the Examiner points out that heat from Keskula's electric heater 52 is ultimately used for heating fuel flowing to the

fuel cell stack (i.e., the heat is transferred to Keskula's heat exchanger 14 which heats the fuel as it flows to fuel cell 22) (Ans. para. bridging 10-11). With regard to this point, the Examiner states that "the effect of the heater is part of the fuel path" (*id.*). Apparently, the Examiner interprets the claim 1 limitation under review as encompassing an arrangement wherein the electric heater is outside the fuel path but "the effect of the heater is part of the fuel path" (*id.*). In an implicit attempt to provide support for this claim interpretation, the Examiner alleges that Appellants' Figure 10 shows such an arrangement (*id.* at 11).

The Examiner's response lacks convincing merit for a number of reasons. First, the claim interpretation discussed above is contrary to the plain meaning of Appellants' claim language. The language of claim 1 expressly requires "an electric heater positioned . . . along a fuel path at a point upstream from the fuel cell stack for heating the fuel prior to the fuel reaching the fuel cell stack." The plain meaning of this language requires the electric heater to be positioned along the fuel path and therefore, contrary to the Examiner's apparent belief, cannot include an arrangement wherein the heater is positioned outside the fuel path. Second, the Examiner incorrectly characterizes Appellants' Figure 10 as showing an arrangement wherein the electric heater is positioned outside the fuel path. According to the Specification, the electric heater for each of the embodiments shown in Figures 9-11 is positioned along the fuel path upstream from the fuel cell stack (*see*, for example, Spec. paras. [00033] and [00035]).

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Application 10/612,226

For the above stated reasons, we cannot sustain any of the § 103 rejections advanced by the Examiner in this appeal.

The decision of the Examiner is reversed.

REVERSED

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